

# PATENT ABSTRACTS OF JAPAN

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(71)Applicant : ASAHI CHEM IND CO LTD

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(72)Inventor : TSUJIOKA NORIO  
KONDO TAKAHIKO

## (54) PARTIALLY HYDROPHILIZED MICROPOROUS POLYOLEFIN MEMBRANE

### (57)Abstract:

**PROBLEM TO BE SOLVED:** To provide a separator for a closed-type alkali secondary battery having high energy density and high output density, free from the increase of the inner pressure of the battery caused by oxygen gas generated in the battery even in an overcharged state, giving a battery having excellent reliability and safety and exhibiting long life.

**SOLUTION:** The membrane is a partially hydrophilized membrane produced by the partial hydrophilization of a microporous polyolefin membrane having a thickness of  $\geq 20 \mu\text{m}$  and  $\leq 120 \mu\text{m}$ , an MD tensile breakage strength of  $\geq 100 \text{ Kg/cm}^2$ , a porosity of  $\geq 30\%$ ; and an average pore diameter of  $\geq 0.01 \mu\text{m}$  and  $\leq 1 \mu\text{m}$ . The number ratio of the hydrophilic pores to the hydrophobic pores is 70:30 to 95:5 and any pore has a pore having opposite character at a distance of  $\leq 4 \text{ mm}$ .